Epidemiology Survey Results

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Protecting You and Your Environment

Topics of Presentation:

- Survey of Health District's Progress Toward Focus Area B Objectives
- Syndromic Surveillance Evaluation Survey
- Nosocomial Infection Surveillance Survey

Health District (HD) Survey- Progress Toward FAB Objectives

- CDC Emergency Preparedness Grant
  - Focus Area B- Surveillance and Epidemiology Capacity
    - 9 critical capacities- multiple objectives
    - See web site: http://vdhweb/bt/FocusB.doc
  - Report on progress for the second quarter (Dec-Feb)
  - 30 (88%) out of 34 health districts responded

Emergency Notification Procedures

- 28 (93%) HD have emergency notification procedures in place
  - 24 hr/on call/ECC service- 7 (23%)
  - On call cell/phone/pager- 11 (37%)
  - Contact info Distributed- 8 (27%)
  - Emergency Contact Tree - 2 (7%)

Emergency Notification Procedures

- How emergency notification procedures are working
  - Excellent- 17 (57%)
  - Good- 12 (40%)
  - Fair- 1 (3%)
- Number of after hours calls received
  - Total- 362
  - Mean- 12
  - Median- 5

Emergency Notification Procedures

- Number of HD notifying providers of after hours information
  - Physicians- 27 (90%)
  - Hospital ER- 26 (87%)
  - ICP- 28 (93%)
- Mean number of times providers notified per HD
  - Physician- 3
  - Hospital ER- 3
  - ICP- 3

Emergency Notification Procedures

- Other providers notified include
  - Nursing home/assisted living
  - Schools
  - Urgent Care
  - Police/Fire/EMS
  - Military
  - Veterinary
  - City Officials

Emergency Notification Procedures

- Mechanisms used to notify providers- number of HD
  - Personal visits- 21 (70%)
  - Meetings- 18 (60%)
  - Formal Pres- 10 (33%)
  - Posters/signs- 7 (23%)
  - Mailings- 18 (60%)

Disease/Surveillance Presentations

- 26 HD gave presentations on diseases/surveillance
- 163 total presentations were given
- Groups to whom HD gave presentations:
  - HD staff- 21 (70%)
  - Healthcare worker- 15 (50%)
  - Community- 12 (40%)
  - College/Univ/School- 10 (33%)
- Other groups include:
  - Law, EMS, veteran's affairs, epi surveillance, day care, industrial hygienist, nursing home

Evaluation Component

- 13 HD (50%) had at least one presentation with an evaluation component
- 17 of 163 presentations (10.4%) had an evaluation component

Quarterly Reports for Providers

- 17 (65%) responding HD have developed a report
- 16 (94%) of these HD have published their report

Epidemiology Response Team (ERT)

- 29 (97%) HD have an ERT
- 22 (76%) of these have had at least one ERT meeting
  - Total meetings 67
  - Mean per HD 3
- Number of teams with at least one of the following:
  - Epidemiologist 23 (79%)
  - Health Director 21 (72%)
  - Environmental Health 21 (72%)
  - Nurse 25 (86%)
  - Planner 16 (55%)

Questions/ Discussion

- Is there any way to improve emergency notification procedures in the districts?
- Which mechanisms are most effective for providing information to providers?
- What methods are most effective for improving disease reporting?
- Are the HAN notifications helpful sources of information about current events/diseases?
- Is there a need for more presentations/ communication with any part of the community?
- Are expectations for the ERT being fulfilled?

Syndromic Surveillance Evaluation

- Purpose
  - To gather data on ED syndromic surveillance activities- categorizations, alerts, follow-up
  - To get feedback from participants on the syndromic surveillance process

ED Syndromic Surveillance

- HD reviewed emergency department chief complaint logs for specified hospitals

- Grouped chief complaints into syndrome categories
  - Death
  - Sepsis
  - Rash
  - Respiratory
  - Other
  - GI Illness
  - Unspecified Infection
  - Neurological
  - Total

ED Syndromic Surveillance

- Used CuSum technique to identify unusual patterns (flags)
- Followed-up on flags
- 13 HD recorded daily syndromic surveillance activities from 08/17/2003-10/10/2003

ED Syndromic Surveillance

- Flags detected
  - Death 36
  - Sepsis 57
  - Respiratory 63
  - GI Illness 33
  - Unspecified Ill 22
  - Neurological 40
  - Rash 39
  - Other 52
  - Total ED Census 16

- Total flags 358
- Average/day 6.6
- Avg/day/HD 0.5

ED Syndromic Surveillance

Comparison of flags between regions

Region	# of Districts	Total Flags	Average per day*
Northern	5	212	3.9
Eastern	8	146	2.7

* t= 1.5, p= 0.137

ED Syndromic Surveillance

- Follow-up conducted
  - Reviewed logs 229
  - Contacted ED 67
  - Contacted ICP 31
  - Contacted lab 3
  - Elec rec review 27
  - Elec lab review 26
  - In-person review 20
  - Contacted patient 1
  - To regional Epi 0
  - Requested labs 0
  - Epi investigation 1

Resource Demands

- Administrative time (minutes/log)
  - Average- 18 (range: 0-150)
- Coding time (minutes/log)
  - Average- 17 (range: 1-90)
- Follow-up time of flags (minutes/flag)
  - Average- 14.9 (range: 1-90)

Identification of "Unusual Activity"

- Hurricane Isabel (3 days, 6 flags, 2 districts)
- Cluster of viral meningitis in a community (1 day, 2 flags, 1 district)
- Other activity (MVA, AMS, sepsis, URI)

Outbreak/Cluster Detection

	Regular Surveillance	Syndromic Surveillance
Northern Region	No outbreaks/clusters	No flags
Eastern Region	Viral Meningitis	Neurological flag

Non-flag Follow-up

- Some HD conducted follow-up of chief complaints although no flags were raised
  - Total times conducted- 60
  - Average time spent on follow-up- 7.3 minutes
  - Minimum- 0
  - Maximum- 300

Non-flag Follow-up

- Type of non-flag follow-up conducted
  - Record/lab review
  - Contacted ED/ICP
- Chief complaint/ diagnoses of cases followed up
  - Bites, Sepsis, MVAs, 30 yr old unresponsive, food poisoning
  - Hepatitis A, MRSA , meningitis, TB, rabies, TSS, poison oak/ivy, chickenpox, pneumonia

Feedback on Process

- Focus groups conducted - 22 specific questions about the syndromic surveillance process, problems, and benefits

Feedback on Process- Key Points

- Strengthened relationship with ICPs, local hospitals, emergency departments
- Facilitated detection of reportable diseases- meningitis, dog bites, SARS
- Increased knowledge of medical terminology, awareness of diseases in community- facilitated information gathering during hurricane

Feedback on Process- Key Points

- Evaluating need for follow-up depends on experience, astute clinician
- Respiratory, GI Illness take most follow-up time
- 4 districts say will be useful, 4 say may not be useful
- Workload demands during outbreaks and weekends should be addressed

Questions/ Discussion

- How did the hurricane confound the data process?
- How will syndromic surveillance change through automation?
  - Discovery of incidences not categorized into syndromes
  - Relationship with providers
  - Surveillance during emergencies
  - Problems encountered during manual surveillance
  - Identifying unusual activity
- Future evaluation plans

Nosocomial Infection Surveillance Survey

- Bill proposal
  - HB 310 Nosocomial Infections; release of information.
  - Proposed on 01/14/04- Defeated
  - To provide for the surveillance of hospital specific nosocomial infection incidences in order “to protect the interests of VA consumers”

Definition of Nosocomial Infection

- "any [illness or] group of illnesses of common etiology occurring in a [patient or] group of patients in a medical care facility acquired by exposure of those patients to the disease agent while confined in such a facility"*
- An infection that was not present or incubating at the time of admission (CDC)

* Regulations for Disease Reporting and Control, Commonwealth of Virginia, State Board of Health, Jan 1999

Question

- What can the Virginia Department of Health do?
  - Research current legislation in other states
  - Review current standards, regulations, and recommendations
  - Survey hospitals to determine current practices
  - Make recommendations

Nosocomial Infection Survey

- A 14 part questionnaire sent to 94 hospitals throughout the state
- 73 (78%) hospitals responded

Methods of Surveillance

- Concurrent (95.5%) vs. Retrospective (87.7%)

- Scope of Surveillance:
  - Targeted- 53.4% (39 hospitals)
  - Whole House- 46.6% (34 hospitals)

Methods of Surveillance

- 79.5% of all hospitals conduct surveillance continuously vs. episodic
- 95.9% use microbiology and clinical data to detect infections (vs. microbiology only)
- Case definitions used to define infection
  - CDC- 80.8%,
  - CDC/hospital modified-16.4%

Infections for which Hospitals Conduct Surveillance

- **Bloodstream Inf.** (90.4%)
  - Primary 23 (31.5%)
  - Secondary 2 (2.7%)
  - Both 41 (56.2%)
- **Surgical Site Inf.** (100%)
  - All 37(50.7%)
  - Selected 36 (49.3%)
- **UTI** 55 (75.3%)
- **Pneumonia** (95.9%)
  - Medical 7 (9.6%)
  - Vent 28 (38.4%)
  - Both 35 (47.9%)

Emerging Infections/Organisms monitored by Hospitals

- Organism (% of hospitals)
  - MRSA- 76.7%
  - VRE- 65.8%
  - ESBL-gram negative rods- 31.5%
  - Resistant *Pseudomonas aeruginosa*- 30.1%

Populations Surveyed

- Populations surveyed among hospitals conducting targeted surveillance (n=39)
  - Pts in intensive care
    - On ventilators 84.6%
    - With central lines 82.1%
    - With specific organisms 53.8%
  - Pts in the general ward
    - With specific organisms 66.7%
  - Pts having surgical procedures
    - All procedures 25.6%
    - Specific procedures 69.2%
    - Specific organisms 2.6%

Calculating Rates

- Denominators used to calculate rates:
  - Patient Days- 61.6%
  - Device Days- 61.6%
  - Admissions- 13.7%
  - Discharges- 17.8%

The Question

- **Can surveillance methods be standardized for meaningful comparison by the public?**

Questions

- What methodologies should be used for identifying, collecting, analyzing and reporting infections?
- What specific infections rates should be reported?
- How should rates and risks be adjusted? By whom?
- How often should rates be reported to the health department and to the consumer?
- What benchmarks should be used?

Questions

- What will public health do with the information?
- What actions should public health take if an increase is detected? Who will monitor the rates and actions?
- How will the rates be made available to the public? Where should they be published?
- Who will educate the hospitals and consumers?
- How will this impact staffing?

Questions

- Should the rates be reported to another agency and not to the health department? (VHHA)
- Should the reporting of rates by hospitals be voluntary?